REMARKS

Claims 1-58 are pending in the present application. The pending claims stand rejected in the manner indicated below.

Claims 13, 19, 53, 57, and 58 stand rejected under 35 U.S.C. 112, second paragraph, as being indefinite.

Claims 23 and 26 stand rejected under 35 U.S.C. 102(b) as anticipated by EP 040139 ("EP '139").

Claims 23-28, 35, 42, 43, and 50-52 stand rejected under 35 U.S.C. 103(a) as being unpatentable over EP '139.

Claims 1-58 stand rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-16 of U.S. Patent No. 6,197,223.

The foregoing rejections, and other items in the Office Action, are addressed in the following paragraphs. Consideration of the pending claims is respectfully requested in view of the following comments.

Claims 13, 19, 53, 57, and 58 - 35 U.S.C. 112, second paragraph

The rejection of claims 13, 19, 53, 57, and 58 under 35 U.S.C. 112, second paragraph, is respectfully traversed.

Claim 13 has been amended to remove the trademarked name DABCO.

Claim 19 has been amended to include the formula $X\text{-}B\text{-}X_1$. As a result, claim 19 properly depends from claim 18. Support for this amendment can be found on page 5, line 24, of the specification.

Claim 53 has been amended to refer to the light absorbing portion of A_1 instead of the light absorbing portion of A. Also, the word "dizaotized" has been corrected to "diazotized." As a result, claim 53 properly depends from claims 26 and 27, and claim 58 properly depends from claim 54, which depends from claim 53. Support for this amendment can be found on page 13, line 7, of the specification.

Claim 57 has been amended to refer to the light absorbing portion of A_1 instead of the light absorbing portion of A_2. As a result, claim 57 properly depends from claim 51. Support for this amendment can be found on page 27 of the specification.

Thus, Applicants respectfully request the Examiner to withdraw the rejection of claims 13, 19, 53, 57, and 58 under 35 U.S.C. 112, second paragraph.

Claims 23 and 26 - 35 U.S.C. 102(b)

The rejection of claims 23 and 26 under 35 U.S.C. 102(b) as anticipated by EP '139 is respectfully traversed.

Contrary to the Examiner's position, claims 23 and 26 are not anticipated by EP '139. Claim 23 recites a light absorbing polymer wherein each repeating unit comprises the residue of a light

absorbing diacidic monomer having a light absorption maximum between about 300 nm and 1200 nm, such as anthraquinone diacidic residues. Claim 26 depends from claim 23.

The polymers disclosed in EP '139 do not anticipate the polymers recited in claim 23 because EP '139 only discloses polymers comprising at least an anthraquinone diacidic monomer residue and a diacidic monomer residue having a light absorption maximum below 300 nm. (See p. 8, ln. 22, through p. 9, ln. 24). As a result, each repeating unit in the polymers disclosed in EP '139 does not exclusively contain light absorbing diacidic monomers having a light absorption maximum between about 300 nm and 1200 nm.

For example, EP '139 discloses polymers comprising terephthalic acid residues. Terephthalic acid has a λ_{max} in dioxane of 242 nm and 286 nm[1], which is below the range recited claim 23.

Thus, Applicants respectfully submit that EP '139 patent does not anticipate claims 23 and 26 of the present application and respectfully request that the Examiner withdraw the rejection of these claims under 35 U.S.C. 102(b).

Claims 23-28, 35, 42, 43, and 50-52 - 35 U.S.C. 103(a)

The rejection of claims 23-28, 35, 42, 43, and 50-52 under 35 U.S.C. 103(a) as obvious over EP '139 is respectfully traversed.

[1] Handbook of Chemistry & Physics, 55th Ed., CRC Press (1974-75).

Applicants submit that the Examiner has failed to establish a prima facie case of obviousness for two reasons.

Applicants submit that the Examiner has not provided a clear and particular reason, suggestion, or motivation from the prior art for a person of ordinary skill to modify EP '139 to achieve the light absorbing polymers of the present invention.

In addition, the Examiner has cited In re Boesch, 205 USPQ 215 (CCPA 1980), as support for the motivation to modify EP '139 to achieve the light absorbing polymers of the present invention. However, in Boesch "[e]ach of the claimed ranges of constituents in [the] claimed alloys overlap[ed] ranges disclosed by [the prior art]." The Examiner has stated that EP '139 differs from the present invention "in not specifically teaching having the diacid monomer at the particular level of the present invention." As a result, it is inappropriate to apply the reasoning in Boesch to support a prima facie case of obviousness.

Applicants also submit that the Examiner has not provided a reason, suggestion, or motivation from the prior art for a person of ordinary skill to modify EP '139 to achieve the blends of various thermoplastics with the light absorbing polymers of the present invention. EP '139 only teaches the copolymerization of certain colorants at very low levels into polyesters during polyester manufacture. For example, EP '139 teaches that various unsaturated colored polyesters prepared from unsaturated

dicarboxylic acid monomers and dihydric alcohols, that contain reactive olefinic groups, can be further reacted or copolymerized with various ethylenically unsaturated monomers used as solvents and reactants. (See p. 10, ln. 6 through p. 11, ln. 6).

Thus, Applicants respectfully submit that the Examiner has failed to establish a prima facie case of obviousness and respectfully request that the Examiner withdraw the rejection of claims 23-28, 35, 42, 43, and 50-52 under 35 U.S.C. 103(a) as obvious over EP '139.

Claim 1-58 - Double Patenting

Claims 1-58 stand rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-16 of U.S. Patent No. 6,197,223 ("US '223").

Applicants respectfully submit that an obviousness-type double patenting rejection of claims 1-58 over claims 1-16 of US '223 is inappropriate.

The third sentence of 35 U.S.C. 121 states that:

> [a] patent issuing on an application with respect to which a requirement for restriction under this section has been made, or on an application filed as a result of such a requirement, shall not be used as a reference either in the Patent and Trademark Office or in the courts against a divisional application or against the original application or any patent issued on either of them, if the divisional application is filed before the issuance of the patent on the other application.

(35 U.S.C. 121)

In other words, 35 U.S.C. 121 prohibits the use of a patent issuing on an application with respect to which a requirement for restriction has been made as a reference against any divisional application, if the divisional application is filed before the issuance of the patent.

The present application is a divisional application of US '223, in which the Examiner maintained a restriction requirement among Group I, claims 1-59, Group II, claims 59-60 and 63-68, Group III, claims 61-62, Group IV, claims 69-74, 75-77 and 82-92, Group V, claim 78, Group VI, claim 79, Group VII, claims 80-81, and Group VIII, claims 93-108. The claims of Group VIII were elected in the parent application, and this application is directed toward the invention of Group I.

Further, the present application was filed before the issuance of US '223. The present application was filed on December 29, 2000, and US '223 issued on March 6, 2001.

Thus, Applicants respectfully request that the Examiner withdraw the rejection of claims 1-58 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-16 of US '223.

CONCLUSION

As explained in detail above, Applicants believe that the presently claimed light absorbing polymer is patentable subject matter.

It is believed that all of the present rejections have been overcome and therefore a favorable Office Action is respectfully solicited.

The Examiner is invited to contact the undersigned at (336) 607-7432 to discuss any matter relating to the application.

Respectfully submitted,

Date: 10/25/02

Samuel B. Rollins

Samuel B. Rollins (Reg. No. 52,180)

KILPATRICK STOCKTON LLP
1001 West Fourth Street
Winston-Salem, NC 27101
Telephone: (336) 607-7432
Facsimile: (336) 734-2651

Version With Markings to Show Changes Made

Amendments in the Claims:

In accordance with 37 CFR 1.121(c), the following versions of the claims as rewritten by the foregoing amendment show all the changes made relative to the previous versions of the claims.

13. (Amended) The method of claim 12 wherein said base is selected from the group consisting of triethylamine, tri-n-butylamine, N-methylpiperidine, N,N'-dimethylpiperazine, N-methylmorpholine and N,N,N',N'-tetramethylethylenediamine, pyridines, picolines, quinolines, isoquinolines, N-alkylpyrroles, N-alkylimidazoles, 1,8-diazabicyclo[5,4,0]undec-7-ene (DBU), 1,5-diazabicylco[4,3,0]non-5-ene (DBN) and 1,4-diazadicyclo[2,2,2]octane **[(DABCO®)]** and mixtures thereof.

19. (Amended) The method of claim 18 wherein said B moiety of the organic compound **[of Formula II]** having the formula $X\text{-}B\text{-}X_1$ is selected from the group consisting of-CH_2CH_2-, -$CH_2CH(CH_3)CH_2$-, -$CH_2C(CH_3)_2CH_2$-, -$(CH_2)_4$-, -$(CH_2)_6$-, -$CH_2CH_2OCH_2CH_2$- and-CH_2-1,4-cyclohexylene-CH_2-.

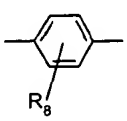
53. (Amended) The composition of claim 26 or 27 wherein the light absorbing portion of **[A]** A_1 comprises the residue of at least one light absorbing monomer selected from the group consisting of azo, disazo, bis-azo and azomethine and having respectively the structures:

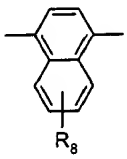
$$R_6\text{-}N{=}N\text{-}Z,\ R_6\text{-}N{=}N\text{-}R_7\text{-}N{=}N\text{-}Z,\ R_6\text{-}N{=}N\text{-}Y_1\text{-}N{=}N\text{-}R_6 \text{ and}$$
$$D{=}HC\text{-}N{=}N\text{-}Z$$

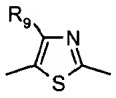
wherein R_6 is the residue of an aromatic or heteroaromatic amine which has been **[dizaotized]** diazotized and coupled with a coupling component H-Z and is derived from an amine selected from the group

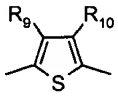
consisting of aromatic and heteroaromatic amine classes selected from the group consisting of aniline, 1-aminonaphthalene, 1-aminoanthraquinone, 4-aminoazobenzene, 2-aminothiazole, 2-aminobenzothiazole, 3-amino-2,1-benzisothiazole, 2-aminothieno[2,3-d]thiazole, 5-aminoisothiazole, 5-aminopyrazole, 4-aminopyrazoloisothiazole, 2-amino-1,3,4-thiadiazole, 5-amino-1,2,4-thiadiazole, 5-amino-1,2,3-triazole, 2-amino-1,3,4-triazole, 2(5) aminoimidazole, 3-aminopyridine, 2(3) aminothiophene, 2(3) aminobenzo[b]thiophene, 2-aminothieno[3,2-b]thiophene, 3-aminothieno[2,3-c]isothiazole, 3-amino-7-benz- 2,1-isothiazole, 3-aminobenzothienoisothiazole, 3-aminoisothiazole[3,4-d]pyrimidine, 5-amino- 1,2,3-triazole, 3(4) aminophthalimide and 5(6) amino-1,2-benzisothiazolon-1,1-dioxide with said aromatic and heteroaromatic ring systems being unsubstituted or substituted with one or more groups selected from C_1-C_{10} alkyl, C_1-C_6 alkoxy, C_3-C_8 cycloalkyl, carboxy, halogen, C_1-C_6 alkoxycarbonyl, formyl, C_1-C_6 alkanoyl, C_1-C_6 alkanoyloxy, dicyanovinyl, C_3-C_8-cycloalkanoyl, thiocyano, trifluroacetyl, cyano, carbamoyl, -CONH-C_1-C_6 alkyl, CONHaryl, CON(C_1-C_6 alkyl)$_2$, sulfamoyl, SO_2NH C_1-C_6 alkyl, SO_2N(C_1-C_6 alkyl)$_2$, SO_2NHaryl, SO_2NH C_3-C_8 cycloalkyl, CONH C_3-C_8 cycloalkyl, aryl, aroyl, -$NHSO_2$ C_1-C_6 alkyl, -N(C_1-C_6 alkyl)SO_2 C_1-C_6 alkyl, -$NHSO_2$ aryl, NHCO C_1-C_6 alkyl, NHCO C_3-C_8 cycloalkyl, NHCOaryl, $NHCO_2$ C_1-C_6 alkyl, NHCONH C_1-C_6 alkyl, NHCONHaryl, N(C_1-C_6 alkyl)aryl, arylazo, heteroaryl, aryloxy, arylthio, C_3-C_8 cycloalkoxy, heteroarylazo, heteroarylthio, arylsulfonyl, tricyanovinyl, aryloxysulfonyl, C_1-C_6 alkylsulfonyl, trifluoromethyl, fluorosulfonyl, trifluoromethylsulfonyl, thiocyano, hydroxy, nitro or CH=D, wherein D is the residue of an active methylene compound selected from the group consisting of malononitrile, α-cyanoacetic acid esters, malonic acid esters, α-cyanacetic acid amides, α-C_1-C_6 alkylsulfonylacetonitriles, α-arylsulfonylacetonitriles, α-C_1-C_6 alkanoylacetonitriles, α-aroylacetonitriles, α-heteroarylacetonitriles, bis(heteroaryl)methanes, 1,3-indanediones, 2-furanones, benzo-2-furanones, naphtho-2-furanones, 2-indolones, 3-cyano-1,6-dihydro-4-methyl-2,6-dioxy (2H)-pyridines, benzo (b) thieno-3-ylidene propane dinitrile-5,5-dioxides, 1,3-bis(dicyanomethylene) indanes, barbituric acid, 5-pyrazolones,

dimedone, 3-oxo-2,3-dihydro-1-benzothiophene-1,1-dioxides or aryl-$C(CH_3)C=C(CN)_2$; wherein R_7 is a divalent aromatic or heteroaromatic radical selected from the group consisting of 1,4-phenylene, naphthalene-1,4-diyl, thiazol-2,5-diyl and thiophene-2,5-diyl:





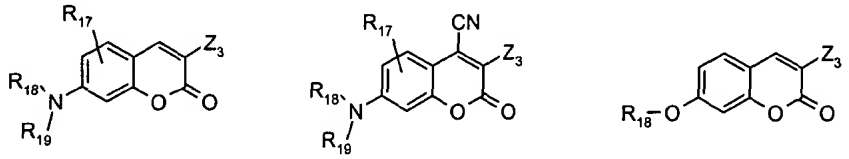




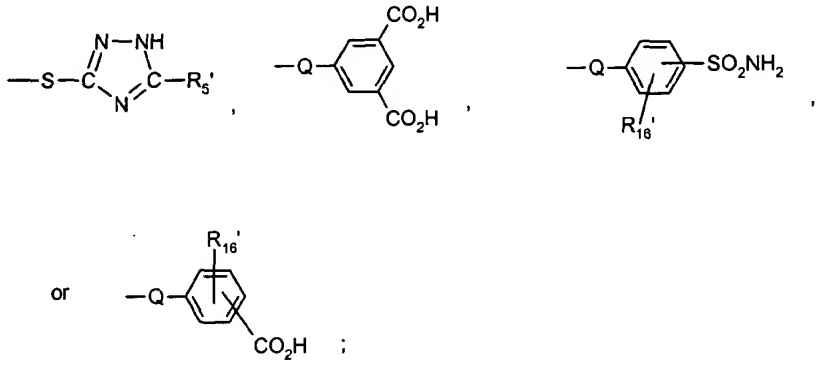
wherein R_8 is selected from the group consisting of hydrogen or 1-2 groups selected from C_1-C_6 alkyl, C_1-C_6 alkoxy, cyano, halogen, -NHCO C_1-C_6 alkyl, -$NHCO_2$ C_1-C_6 alkyl, -NHCO aryl, -NHCONH aryl or NHCONH C_1-C_6 alkyl; R_9 is selected from the group consisting of hydrogen, C_1-C_6 alkyl, halogen, aryl, heteroaryl; R_{10} is selected from the group consisting of hydrogen, C_1-C_6 alkoxycarbonyl, cyano, carbamoyl, aryl, arylsulfonyl, aroyl, -CONH C_1-C_6 alkyl, or C_1-C_6 alkylsulfonyl; wherein Z is the residue of a coupling compound selected from the group consisting of electron rich compound classes of anilines, 1-aminonaphthalenes, 1,2-dihydroquinolines,1,2,3,4-tetrahydroquinolines, benzomorpholines (3,4-dihydro-2H-1,4-benzoxazine), pyrazolones, pyrazoles, 3-cyano-6-hydroxy-2-pyridones, 2,3-dihydroindoles, indoles, 4-hydroxycoumarins, 4-hydroxy-2-quinolones, imidazo[2,1-b]thiazoles, julolidines (2,3,6,7-tetrahydro-1H,5H-benzo[ij]quinolizines), 1-oxajulolidines, 1,2,5,6-tetrahydro-4H-pyrrolo[3,2,1-ij]quinolines, 2,6-diamino-3 cyanopyridines, 2-aminothiazoles, 2-aminothiophenes, 5,5-dimethyl-1,3-cyclohexanedione (dimedone), phenols, naphthols, 2,4-pentanediones or acetoacetarylides; wherein Y_1 is the residue of a bis coupling component selected from the group consisting of anilines, 1,2-dihydroquinolines, 1,2,3,4-tetrahydroquinolines, benzomorpholines (3,4-dihydro- 2H-1,4-benzoxazines), 3-cyano-6-hydroxy-2-pyridones,

2,6-diaminopyridines, 2,3-dihydroindoles, naphthylamines, 2-aminothiazoles, or a combination of these; with the provision that two acidic functional groups containing one acidic hydrogen each or a functional group containing two acidic hydrogen are present in the diacidic light absorbing monomer.

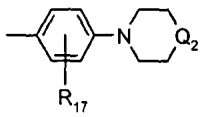
57. (Amended) The composition of claim 51 wherein the light absorbing portion of **[A_2]** $\underline{A}_1$ comprises a residue of at least one diacidic coumarin compounds selected from the group consisting of the structures



wherein Z_3 is selected from the group consisting of cyano, C_1-C_6 alkoxycarbonyl, C_1-C_6 alkylsulfonyl, arylsulfonyl, aryl, heteroaryl, formyl, aroyl, C_1-C_6 alkanoyl or-CH=D, wherein R_{17} is selected from the group consisting of hydrogen, 1-2 groups selected from C_1-C_6 alkyl, C_1-C_6 alkoxy, C_1-C_6 alkylthio, -O C_2-C_6 alkylene-OH, O C_2-C_6 alkylene- C_1-C_6 alkanoyloxy, C_1-C_6 alkylene-OH, C_1-C_6 alkylene- C_1-C_6 alkanoyloxy, halogen, carboxy, C_1-C_6 alkoxycarbonyl, trifluoromethyl,$NHCOR_{24}$, $NHCO_2R_{24}$, $NHCON(R_{24})R_{25}$, and $NHSO_2R_{25}$, wherein R_{24} is selected from the group consisting of hydrogen, C_1-C_{10} alkyl, C_3-C_8 cycloalkyl or aryl, R_{25} is selected from the group consisting of C_1-C_{10} alkyl, C_3-C_8 cycloalkyl or aryl wherein each C_1-C_{10} alkyl group in R_{24} and R_{25} may be further substituted with one or more groups selected from the group consisting of C_3-C_8 cycloalkyl, aryl, aryloxy, arylthio, CO_2H, CO_2 C_1-C_6 alkyl, cyano, hydroxy, succinimido, C_1-C_6 alkoxy,



wherein R_5' is selected from the group consisting of hydrogen, C_1-C_6 alkyl or aryl; R_{16}' is selected from hydrogen or one or two groups selected from C_1-C_6 alkyl, halogen, and C_1-C_6 alkoxy; Q is selected from the group consisting of -O-, -N(COR_{10})-, -N(R_{10})-, -S-, -SO_2-, -CO_2-, CON(R_{10}), SO_2(R_{10})-, wherein R_{10} is selected from the group consisting of hydrogen, aryl, C_3-C_8 cycloalkyl or C_1-C_{10} alkyl; R_{18} and R_{19} are independently selected from the group consisting of hydrogen, unsubstituted C_1-C_{10} alkyl, substituted C_1-C_{10} alkyl, C_3-C_8 cycloalkyl, C_3-C_8 alkenyl, C_3-C_8 alkynyl and aryl or R_{18} and R_{19} may be combined with another element to which they are attached to form a radical Z having the formula



wherein Q_2 is selected from the group consisting of a covalent bond, -O-, -S-, -SO_2-, -CO-, -CO_2-, -N-(C_1-C_6 alkyl)-, -N(CO C_1-C_6 alkyl)-, -N(SO_2 C_1-C_6 alkyl)-, -N(CO aryl)-, or-N(SO_2 aryl); R_{20}, R_{21} and R_{22} are independently selected from the group consisting of or C_1-C_6 alkyl; R_{23} is selected from the group consisting of hydrogen, C_1-C_6 alkyl, C_3-C_8 cycloalkyl, heteroaryl or aryl; wherein D is the residue of an active methylene compound selected from the group consisting of malononitrile, α-cyanoacetic acid esters, malonic acid esters, α-cyanacetic acid amides, α-C_1-C_6 alkylsulfonylacetonitriles, α-arylsulfonylacetonitriles, α-C_1-C_6 alkanoylacetonitriles, α-aroylacetonitriles,

α-heteroarylacetonitriles, bis(heteroaryl)methanes, 1,3-indanediones, 2-furanones, benzo-2-furanones, naphtho-2-furanones, 2-indolones, 3-cyano-1,6-dihydro-4-methyl-2,6-dioxy (2H)-pyridines, benzo (b) thieno-3-ylidene propane dinitrile-5,5-dioxides, 1,3-bis(dicyanomethylene) indanes, barbituric acid, 5-pyrazolones, dimedone, 3-oxo-2,3-dihydro-1-benzothiophene-1,1-dioxides or aryl-$C(CH_3)C=C(CN)_2$, with the proviso that two acidic functional groups containing one acidic hydrogen each, or a functional group containing two acidic hydrogens are present.

32887-251705
WINLIB01:971066.8